Aviation Investigation Final Report

Location:	Baker, Louisiana	**Accident Number:**	CEN13FA326
Date & Time:	June 7, 2013, 13:10 Local	**Registration:**	N510LD
Aircraft:	HAWKER BEECHCRAFT B200GT	**Aircraft Damage:**	Destroyed
Defining Event:	Aerodynamic stall/spin	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The accident pilot and two passengers had just completed a ferry flight on the recently purchased airplane. A review of the airplane's cockpit voice recorder audio information revealed that, during the ferry flight, one of the passengers, who was also a pilot, was pointing out features of the new airplane, including the avionics suite, to the accident pilot. The pilot had previously flown another similar model airplane, but it was slightly older and had a different avionics package; the new airplane's avionics and flight management system were new to the pilot.

After completing the ferry flight and dropping off the passengers, the pilot departed for a short cross-country flight in the airplane. According to air traffic control recordings, shortly after takeoff, an air traffic controller assigned the pilot a heading and altitude. The pilot acknowledged the transmission and indicated that he would turn to a 045 heading. The radio transmission sounded routine, and no concern was noted in the pilot's voice. However, an audio tone consistent with the airplane's stall warning horn was heard in the background of the pilot's radio transmission. The pilot then made a radio transmission stating that he was going to crash. The audio tone was again heard in the background, and distress was noted in the pilot's voice. The airplane impacted homes in a residential neighborhood; a postcrash fire ensued. A review of radar data revealed that the airplane made a climbing right turn after departure and then slowed and descended. The final radar return showed the airplane at a ground speed of 102 knots and an altitude of 400 feet. Examination of the engines and propellers indicated that the engines were rotating at the time of impact; however, the amount of power the engines were producing could not be determined. The examination of the airplane did not reveal any abnormalities that would have precluded normal operation. It is likely that the accident pilot failed to maintain adequate airspeed during departure, which resulted in an aerodynamic stall and subsequent impact with terrain, and that his lack of specific knowledge of the airplane's avionics contributed to the accident.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot's failure to maintain adequate airspeed during departure, which resulted in an aerodynamic stall and subsequent impact with terrain. Contributing to the accident was the pilot's lack of specific knowledge of the airplane's avionics.

Findings

Personnel issues	Incorrect action performance - Pilot
Personnel issues	Knowledge of equipment - Pilot

Factual Information

History of Flight

Enroute-climb to cruise	Stall warn/stick-shaker/pusher
Enroute-climb to cruise	Aerodynamic stall/spin (Defining event)
Enroute-climb to cruise	Loss of control in flight
Uncontrolled descent	Collision with terr/obj (non-CFIT)
Post-impact	Fire/smoke (post-impact)

HISTORY OF FLIGHT

On June 7, 2013 about 1310, central daylight time, a Beechcraft, KingAir, B200GT, airplane, N510LD,impacted terrain shortly after departure in a residential neighborhood near Baker, Louisiana. The airline transport rated pilot received fatal injuries and the airplane was destroyed. The airplane was registered to and operated by Osage Air LLC, Wilmington, Delaware. Visual meteorological conditions prevailed and a flight plan was not filed for the 14 Code of Federal Regulations Part 91 personal cross-country flight. The flight originated from Baton Rouge Metropolitan Airport, Ryan Field (BTR), Baton Rouge, Louisiana, en route to (Pike County) John E Lewis Field Airport (KMCB), McComb, Mississippi.

The accident pilot and two passengers flew to Georgetown, Texas, in a B200 KingAir the day prior to the accident. The B200 airplane was being used as a trade-in, on N510LD. On the day of the accident and after the sale was finalized, the three people returned to BTR in N510LD, with the accident pilot as pilot in command. After dropping off the two passengers at BTR, the accident pilot planned to fly to McComb, with the recently purchased airplane.

Several witnesses reported that the airplane heading north and was low; the airplane then dropped and impacted the roof of a house. The airplane subsequently impacted a tree and two neighboring houses before erupting into flames.

PERSONNEL INFORMATION

The pilot was employed as a corporate pilot, and held an airline transport pilot certificate with ratings for airplane single-engine and multiengine land, and instrument-airplane. The pilot also held several type ratings for jet airplanes. The pilot held a first class medical certificate that was issued on June 4, 2013, with the restriction, "must have available glasses for near vision". At the time of the exam the pilot reported 15,150 total flight hours and 75 hours in last six months. The pilot also reported to the insurance company that he had 5,075 in BE20 (KingAir 200) and had annual training at FSI, Simuflight, or SimCom depending on type of aircraft. The accident airplane was a B200GT and was equipped with Rockwell Collins Proline 21 avionics including an FMS-3000 (Flight Management System) suite. The amount of flight time the pilot had with the Proline 21 system was unknown; however, during delivery of the airplane another pilot noted that the B200GT's avionics were new to the accident pilot.

AIRCRAFT INFORMATION

The Beechcraft B200GT King Air is a twin-turboprop airplane powered by two Pratt & Whitney PT6A-52 engines. The airplane was maintained under the manufacturer's maintenance program. The airplane's maintenance records were located among the wreckage and were fire and water damaged. A review of the records revealed that the airframe's phase 1- 4 inspections were completed on March 18, 2013. At the time of the inspection, the airframe had a total time of 974.2 hours; the left and right engines had also accumulated 974.2 total hours.

METEOROLOGICAL INFORMATION

At 1353, the automated weather observation facility located at BTR, reported wind from 280 degrees at 8 knots, visibility 10 miles, scattered clouds at 3,300 and 7,500 feet, temperature 84 Fahrenheit (F), dew point 67 F, and a barometric pressure of 29.88 inches of mercury.

COMMUNICATIONS and RADAR INFORMATION

According to air traffic control communications, the airplane departed BTR runway 31. Just after takeoff, the controller assigned the pilot a heading and altitude to MCB. The pilot acknowledged the transmission and indicated he would turn to a 045 heading. The radio transmission appeared normal, with no concern in the pilot's voice. However, an audio tone was present in the background of the pilot's radio transmission. Shortly thereafter, the pilot made a radio transmission stating that he was going to crash. The same audio tone was heard in the background, along with distress noted in the pilot's voice. The tone was consistent with the airplane's stall warning horn. There was no further communications with the pilot.

Review of radar data revealed the airplane departed BTR, and tracked in a right arc away from the airport. After airborne, as the airplane started to turn right, radar data showed the ground speed as 124 knots and increased to about 128 knots; the first altitude started at 700 feet and increased to 1,200 feet, as the airplane started its turn. The radar track then depicted a northeasterly heading as the airplane appeared to proceed on course. Before the airplane disappeared from radar, the airspeed decreased to 102 knots and the altitude decreased to 400 feet.

WRECKAGE AND IMPACT INFORMATION

The accident site was located about 3.5 miles northeast of BTR, in a residential area. The first impact point was the roof of one home; the airplane then impacted a tree and shed in the backyard of neighboring homes. The airplane came to rest in an upright position, in the corner of a house. The impact with the tree, split the fuselage in two, with the empennage and about an 8-10 foot fuselage section coming to rest in the yard of the neighboring home. All major components were accounted for on site. A postcrash fire consumed most of the airplane; fire, smoke/water also damaged the two homes. The left propeller was separated from the engine and was just left of the main wreckage. The propeller blades were twisted and had cord wise marks near the tips. The right propeller remained attached to the engine; the two top, exposed blades were consumed by the fire, the two bottom blades were covered by the wreckage/debris.

MEDICAL AND PATHOLOGICAL INFORMATION

The Office of the Coroner, East Baton Rouge Parish, Paton Rouge, Louisiana, conducted an autopsy on the pilot. The cause of death on was determined to be, "blunt force, thermal, and inhalational injures".

The FAA Toxicology Accident Research Library, Oklahoma City, Oklahoma, conducted toxicological testing on pilot. The test was negative for ethanol and cyanide; however, the test was positive for carbon monoxide in the blood at 21%. Acetaminophen was detected in the urine (15 ug/ml, ug/g), diltiazem was detected in the blood and urine, and ibuprofen was detected in the urine.

Both acetaminophen and ibuprofen are non-prescription pain medicine and are commonly marketed under the trade name Tylenol and Motrin, respectively. Diltiazem is used to treat hypertension (high blood pressure), angina (chest pain), and certain heart rhythm disorders.

TEST AND RESEARCH

After initial documentation of the wreckage site, the wreckage was recovered for further examination. The airplane's cockpit voice recorder (CVR) was located and shipped to the vehicle recorder lab in Washington, DC for download.

A CVR group was convened. The recording was audited by the CVR group Laboratory and a summary report prepared. The CVR Specialist Factual Report is located in the official docket for this investigation.

The CVR captured part of the previous flight, in which the accident pilot received help from another pilot, in explaining the operation of the new airplane. The accident pilot also received instruction, prior to his departure on the accident flight.

The NTSB along with technical representatives from the airframe, engine, and propeller manufacturer conducted a follow up exam. The left hand, four bladed propeller and front section of the reduction gearbox had separated from the engine due to a fractured engine shaft. The 2nd stage planetary gears and bolt screws, displayed rotational scoring from contact with adjacent components during separation. Rotational scoring was noted on the compressor turbine and power turbine discs from contact with adjacent components. The 1st and 2nd stage power turbine blades exhibited rubs from localized contact regions of their respective shrouds.

The left engine propeller blades rotated freely in the hub, due to the blade knobs fracturing off during impact. All blades showed some rotational scoring and slight twisting at the tips. The propeller experienced severe thermal damage. Half of the spinner was missing due to melting away.

The right hand engine displayed light torsional bending aft of the exhaust duct. The compressor turbine disc exhibited rotational scoring from contact with the adjacent component. The 1st stage power turbine blades exhibited a 360 degree rub from contact with its respective shroud.

Two of the four propeller blades on the right engine were consumed by the post-crash fire, leaving about 10 inches of blades, from the hub assembly. The propeller was still attached to the engine. The blades

rotated freely in the hub, due to the blade knobs fracturing off during impact. The spinner dome, bulkhead, three counterweights were missing.

Both engines and the left propeller displayed signatures consistent with some power being generated at impact; however, the amount of power could not be determined.

The fire damage to the right propeller and absence of signatures prevented any conclusion about power setting before impact.

The engines and propellers examination did not reveal any discrepancies that would have precluded normal operation.

Pilot Information

Certificate:	Airline transport	**Age:**	71
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 1 With waivers/limitations	**Last FAA Medical Exam:**	June 11, 2012
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	March 1, 2013
Flight Time:	15925 hours (Total, all aircraft), 5200 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	HAWKER BEECHCRAFT	**Registration:**	N510LD
Model/Series:	B200GT	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	BY-24
Landing Gear Type:	Retractable - Tricycle	**Seats:**	
Date/Type of Last Inspection:	March 18, 2013 Continuous airworthiness	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	2 Turbo prop
Airframe Total Time:	974 Hrs as of last inspection	**Engine Manufacturer:**	P&W CANADA
ELT:	C126 installed, activated, did not aid in locating accident	**Engine Model/Series:**	PT6A-52
Registered Owner:	Osage Air LLC	**Rated Power:**	
Operator:	Osage Air LLC	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KBTR,70 ft msl	**Distance from Accident Site:**	3 Nautical Miles
Observation Time:	12:53 Local	**Direction from Accident Site:**	45°
Lowest Cloud Condition:	7500 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Broken / 7500 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots / None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	250°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.88 inches Hg	**Temperature/Dew Point:**	28°C / 20°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	BATON ROUGE, LA (BTR)	**Type of Flight Plan Filed:**	None
Destination:	McCOMB, MS (MCB)	**Type of Clearance:**	VFR
Departure Time:	13:10 Local	**Type of Airspace:**	

Airport Information

Airport:	BATON ROUGE METROPOLITAN, RYAN BTR	**Runway Surface Type:**	
Airport Elevation:	70 ft msl	**Runway Surface Condition:**	Unknown
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	30.576389,-91.136947(est)

Administrative Information

Investigator In Charge (IIC):	Hatch, Craig
Additional Participating Persons:	Dean Johnson; FAA Baton Rouge FSDO; Baton Rouge, LA Brian Weber; Beechcraft Corporation; Wichita, KS Daniel Boggs; Hartzell Propellers, Inc Jeff Davis; Pratt&Whitney
Original Publish Date:	September 15, 2014
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=87124